AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A stent for use in the non-vascular or vascular field, the stent comprising

a basic structure made of a material selected from the group consisting of a biodegradable plastic material and a degradable metal; and

a biodegradable SMP material selected from the group consisting of covalent polymer networks and covalent polymer interpenetrating networks, said networks comprising pentadecalacton units, and

wherein the SMP material covers the basic structure.

2. (canceled).

3. (previously presented): The stent of claim 1, wherein the degradable metal includes one of the following: a magnesium alloy, pure magnesium, and a composite of magnesium or a magnesium alloy with biodegradable polymer.

4. (previously presented): The stent of claim 1, further comprising additional additives selected among x ray contrast materials and medically effective compounds.

5. (previously presented): The stent of claim 1, wherein the SMP material is selected from among the following: polymer networks, thermoplastic SMP materials, composite materials and blends.

6. (previously presented): The stent of claim 1, wherein the SMP material is selected from among at least one of SMP materials in which the SMP effect is induced thermally, is photo induced, wherein the SMP material is biocompatible, hemocompatible and wherein the SMP material reveals a particle free degradation behavior.

7. (canceled).

8. (currently amended): The stent of claim ~~7~~1, wherein said networks comprise ~~the network consists of~~ cross linked caprolacton macromonomers.

9. (previously presented): The stent of claim 1, wherein the stent additionally comprises a surface coating.

10. (previously presented): The stent of claim 9, wherein the surface coating is selected among the coatings that modify hemocompatibility.

11. (previously presented): A method of manufacturing the stent of claim l, comprising the processing of the SMP material to the stent by one of the following: extrusion methods, coating methods, metal casting methods, and spinning and weaving methods.

12. (previously presented): A system, comprising the stent of claim l, and including at least one of the following: a temperature controlled balloon catheter and a balloon catheter with an optical fiber.

13. (previously presented): A method for the minimal invasive implantation of the stent of claim 1, comprising the following steps:

placing the stent onto a catheter selected from the group consisting of a temperature controlled balloon catheter or a balloon catheter with an optical fiber, wherein the SMP material has two shapes in the memory and wherein

this material was programmed to two shapes, wherein the first shape, compared to the second shape, is a tubular shape with a larger diameter;

inserting the stent placed in this manner to the desired position, wherein the SMP material exists in its second shape;

heating the stent by inserting a heating medium into the catheter, and introduction of light (preferably UV light) of a suitable wavelength;

activating the SMP effect to bring the stent into the first shape; and

removing the balloon catheter.

14. (previously presented): A method for the minimal invasion implantation of the stent of claim 1, comprising the following steps:

placing the stent onto one of the following:

a temperature controlled balloon catheter and a balloon catheter having a an optical fiber;

inserting the stent placed in this manner to the desired position;

one of:

heating the stent by inserting a heating medium into the catheter and introducing light (preferably UV light) of a suitable wavelength;

activating the SMP effect to bring the stent into its permanent shape; and

removing the balloon catheter.